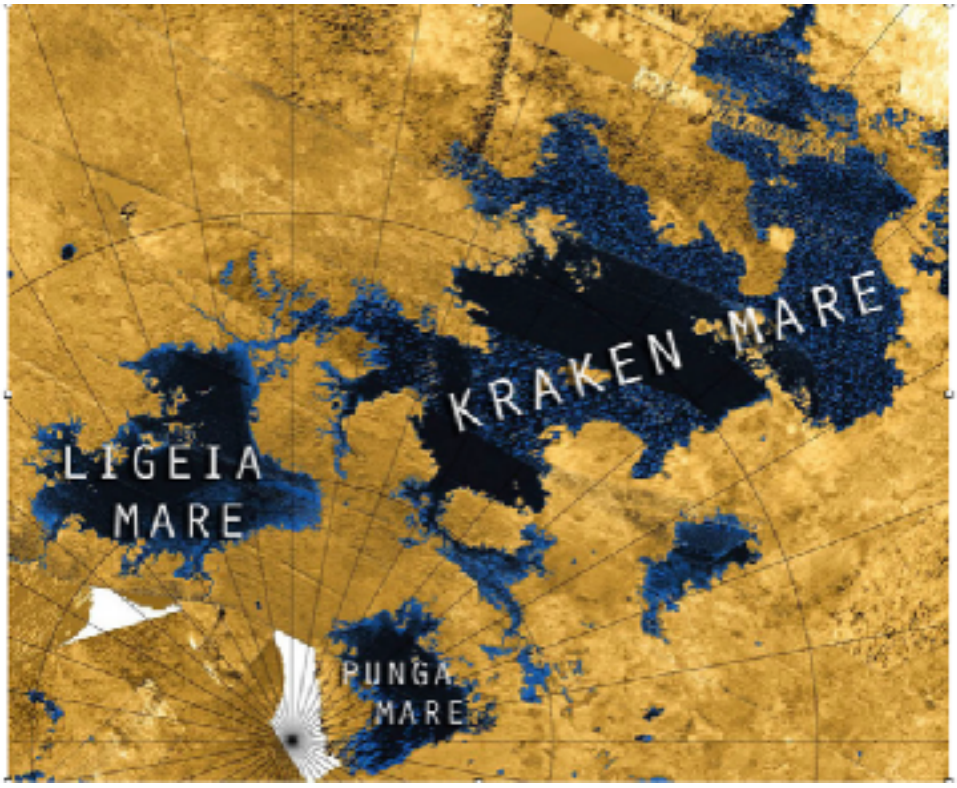
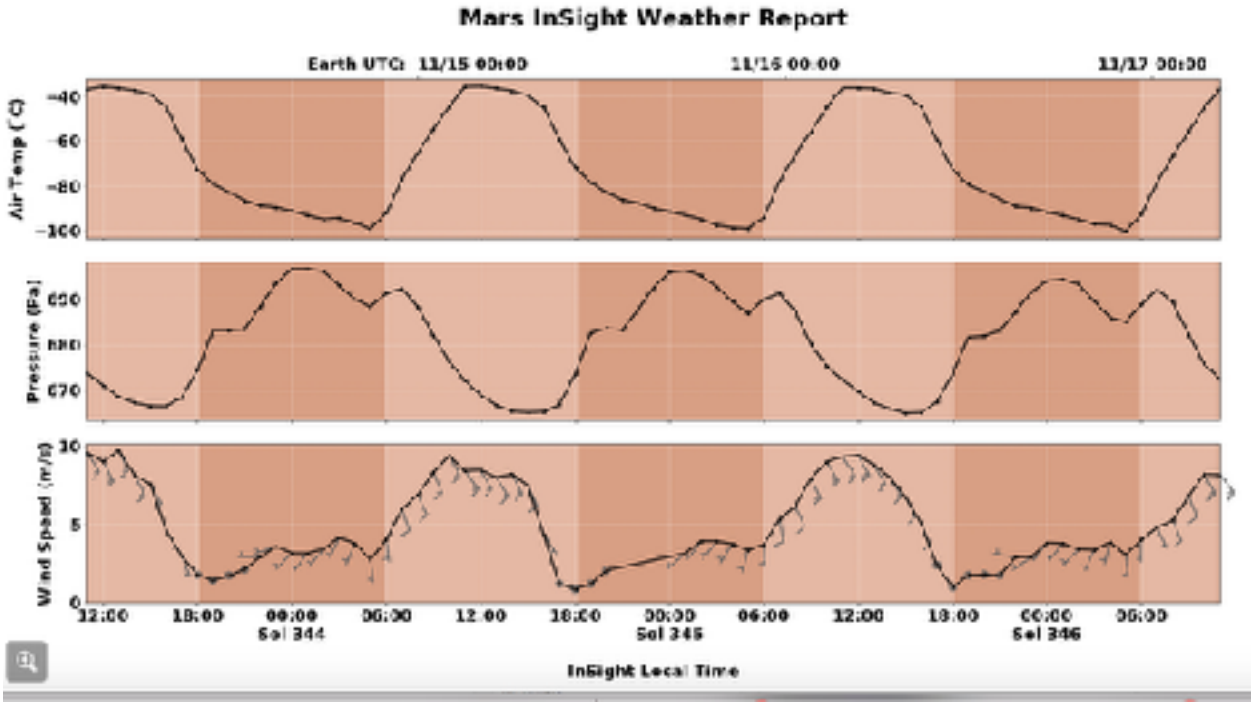
[An online publication of the Milwaukee Lunar Reclamation Society, a chapter of the Moon Society and of the National Space Society & an Outpost of the Mars Society]

OUTBOUND #25 — — — — —DECEMBER 2019



Above: Titan's "Great Lakes" are as large as our own.

From <u>the scan below,</u> one can see the great difference, Celsius temperature wise, between days and nights on Mars. ***When Nightfall approaches, you'd better have a warm well-insulated place to retreat into! <u>And pretend that you are "The Martian!"</u>***



And caves won't do as they will be cold all the time.

The most comfortable place to observe what's going on on Mars, is here back at home on Earth. That is, ***until we have mastered the best, easiest, and least expensive (yes, <u>all of the above</u>) to keep warm, not only during the Martian night, but also in the daytime, and not just at local mid-afternoon!***

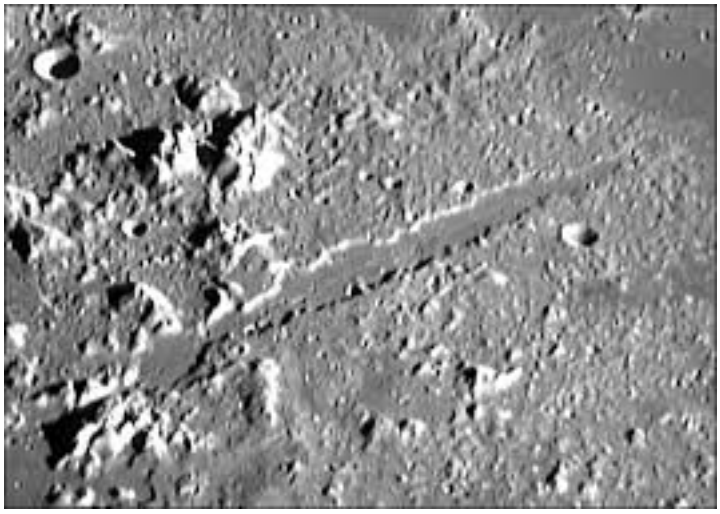
In comparison the site of the Mars Desert Research Station in Utah will be more like heaven. That's why would-be Martians would do better training at the **Flashline Mars Arctic Research Station on Canada's far north Devon Island,** or someday at **a new station in one of Antarctica's Dry Valleys**, where the climate - temperature wise only - is closer to what we will find on Mars.

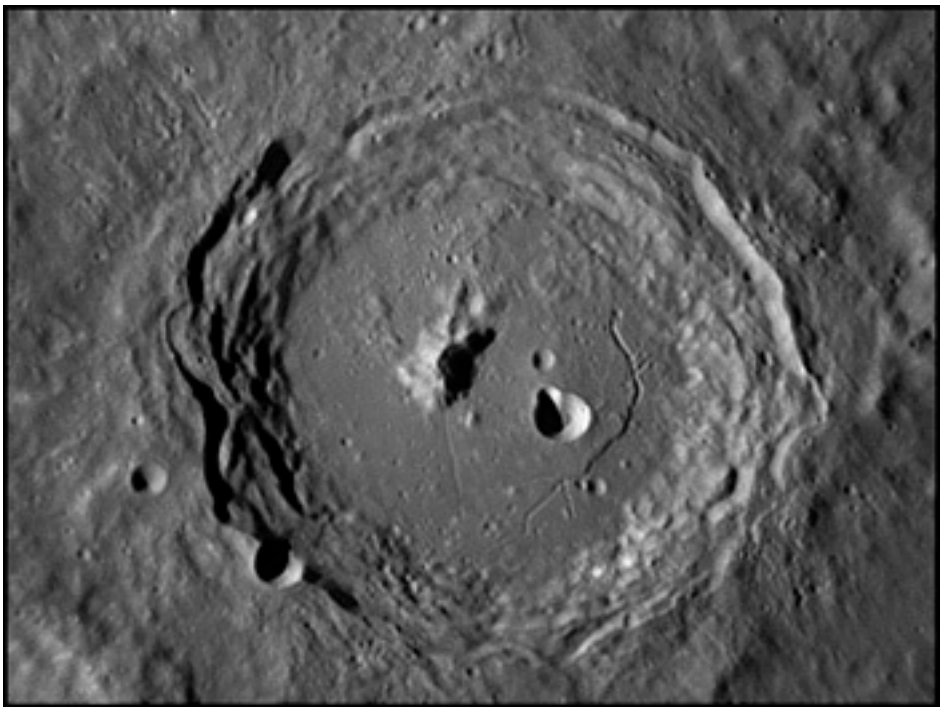
In either of these locations, it would be easy to operate on clocks 37 minutes longer per day - "Mars Time" but so far, no FMARS crew has done so.

Why not? For heaven's sake! The trifle longer day will be fine for night people, but for morning people like myself, a bit harder, but **there may be a way: stay up 37 minutes later each night**, and wake up right on time the next morning. #

Tourist “Must See” type features on the Moon

A bus ride through the Alpine Valley





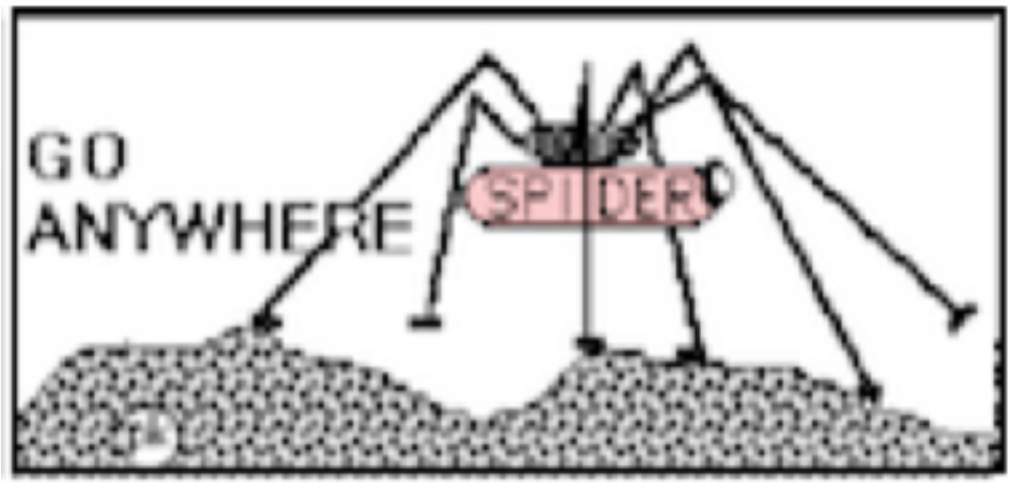
<u>Cable Car rides from Crater rim to Central Peaks and back</u>

(more likely on smaller craters, of course!)

Also to, and down into a hole into a lava tube

Go Anywhere "Spider ('Daddy LongLegs') Busses"

can take tourists as well as explorers over most any kind of terrain.



"The" way to travel through the Moon's or Mars' rugged "Highlands"
but also **into and out of craters** etcetera [drawing by Peter.Kokh]
Capacity: Crew plus 30

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PRIMARY NEED FOR *ORBITERS CAPABLE OF DETECTING SUB-SURFACE LAVA TUBES WITH NO SURFACE OPENINGS*

https://agupubs.onlinelibrary.wiley.com/doi/full/10.1002/2017GL074998

Detection of Intact Lava Tubes at Marius Hills on the Moon by SELENE (Kaguya) Lunar Radar Sounder

Abstract: Intact lunar lava tubes offer a pristine environment to conduct scientific examination of the Moon's composition and potentially serve as secure shelters for humans and instruments. We investigated **the SELENE Lunar Radar Sounder** (**LRS**) data at locations close to the **Marius Hills Hole** (MHH), ***a skylight potentially leading to an intact lava tube, and found a distinctive echo pattern exhibiting a precipitous decrease in echo power, subsequently followed by a large second echo peak that may be evidence for the existence of a lava tube.*** The search area was further expanded to 13.00–15.00°N, 301.85–304.01°E around the MHH, and similar LRS echo patterns were observed at several locations. Most of the locations are ***in regions of underground mass deficit suggested by GRAIL gravity data analysis.*** Some of the observed echo patterns are along rille *A*, where the MHH was discovered, or on the southwest underground extension of the rille.

In general we need the following:

√ Locate lava tube openings with easier access.

√ How far inside does the opening rubble reach?

√ Is it easy or difficult to remove rubble for an access route to the intact tube interior, √ ***or is it easier to pave over the rubble after "mashing it?***

What are the differences between lavatubes on the Moon and those on Mars?

√ ***We expect larger tubes on the Moon, and the smallest on Earth, with those on Mars in between, on the premise that***

√ ***The greater the gravity, the lesser the tube cross-section size, - this premise to be revised if expeditions to the Moon and Mars should find otherwise.***

√ Expeditions into lava tubes on the Moon, and comparisons with those on Earth will validate or dismiss the above expectations on Mars.

√ Establishing settlements on Mars √ in lava flow sheets and √ in the flanks of volcanoes are likely to be erected first, ***guaranteeing access to Basalt***, and ***hopefully near sources of water***, though that is by no means taken for granted, *unless we find that Mars' once assumed Northern ocean has remnants below the surface - unlikely but not impossible*.

√ **Finding basaltic lava tubes and water in the same locations or in relatively neighboring locations, would hit the jackpot, but is by no means guaranteed. Locations with both will be the sites of Mars' future "metropolitan" areas.**

USES OF LAVATUBES

√ **LAVA TUBES:** Those with existing **"skylight entrances"** will be ideal as settlement "warehouses" as well as safes storage for record files

(Note: duplicate storage of records in more than one lava tube warehouse would be **wise precautions against possible but rare tube collapse.)**

√ **Cities with access to intact lava tubes are better situated for growth than cities that are not. This possibility favors placement of Xities in maria (dry "seas") rather than in highlands.**

√ **Xities in highlands will be smaller, and less industrial, and perhaps *placed at crossroads and/or near tourist destinations.***

√ Also, cities in maria (lava flow seas) can put their industries in intact lava tubes

along with "back-up" hospitals and storage.

√ Scientists need an accurate way to find and map below surface intact lava tubes in mare areas, and put in use for ***backup warehousing, key industries, backup hospitals, etc.***

√ These priorities will hold on Mars (as well on the Moon,) where ***cities in basaltic maria will be safer and less likely to collapse than cities in Mars' highlands, excepting those on the flanks of volcanoes, which are also most likely to be laced with lavatubes.***

##

Uses of "Intact and Stable" Lava Tubes

√ Well-shielded long narrow settlements

√ Schools, Universities, research facilities, and hospitals

√ Factories and Warehouses: (storage of materials and parts)

√ STORAGE OF RECORDS, artifacts, works of art

√ **Warehouses & records books:** things stored in a lava tube are less likely to be destroyed by an impact than things stored in surface structures (thinner roofs): records of civilization from back as far as we find them, to current. If there were to be a World War III on Earth, heavens forbid!, we would have such records to help us start all over.

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Universities √ *on the Moon and Mars, and √ in Transit*

Should there be just one university on the Moon (and just one on Mars) with branches in various settlements? Or should there be separate ones, rivaling one another, and thus more likely to have active geological and entrepreneurial branches? "**Constructive rivalry**" would encourage more specialty-focused branches.

There should be temporary Mars University branches on space ships bringing new settlers from Earth (and/or from the Moon) to Mars, prior to the coming on line of nuclear spaceships that would make the trip to Mars from Earth and/or from the Moon in far less months

EXPLORING *THOSE* LAVA TUBES (on both the Moon and Mars) *WITH* AN IMPACT-CREATED "SKYLIGHT" OPENING

√ 1st with robot-spiders √ to find best opening route, and √ to map floor and best routes around rubble from opening and rocks broken off from ceiling and walls.
√ Map and size up intact and stable areas.
√Then remove rubble or "pave" over it for easy and routine access, or better yet, arrange the rubble with *secure* winding tunnels for children & young adults to explore, all at minimal cost.
√ Install strong nets needed to catch loose sections of roof and walls
√ Is a platform needed over floor rubble, for walkways and for vehicles.
√ install lighting, on walls, if not on ceiling, to be turned on by motion detectors
√ Exploring "skylight" entrances to otherwise intact lava tubes, take a "census" of pieces of tube wall or ceiling that have fallen onto the floor in addition to the pile below the "skylight" hole

A "TUBE MUSEUM" of CIVILIZATIONS on Earth that "were" and that "are no more!" (To encourage us to better preserve, nourish, and cherish what we have)

Museums on Earth and/or on HOTELS in orbit

 # A selection of "Moon Furnished" and "Mars Furnished" homes in select places on Earth for those considering a move to either world, or for just the curious (and with their children) to explore. A Mobile Museum would reach more people. Such a museum in cities most visited might be a good idea.

"Moon-furnished and Mars-furnished homes" could also be built on Earth for those who would like a "taste" of what it might be like to live on the Moon or Mars.
"Mars-furnished-homes"will have some few differences, mostly in color.

As for "space hotels" in Earth orbit, it would be cheaper (in terns of fuel), to furnish their rooms with furniture and furnishings shipped "down from the Moon, than "up from Earth. And that would make hotels in Earth orbit much more attractive.

— — — — — — — — — —

TOPIC IDEA: civilizations that once were, and WHY they are no more?
(Greece, Rome, etc.) *lest new Lunan/Martian Settlers make similar mistakes.*

——— Getting Around on Mars ———

√ Roads and Railroads on Mars
√ Dirigibles on Mars & in Valles Marineris.
√ Tezsla coaches on Mars √ Coaches on the Moon? "Greyhound-Luna", of course

√ Touring inside lava tube skylights, creating paths through the rubble pile, exploring tubes in both directions.
Setting up places for Earth/Mars archives (sufficient volume *Plus!)*
Secluded places for possibly dangerous activities

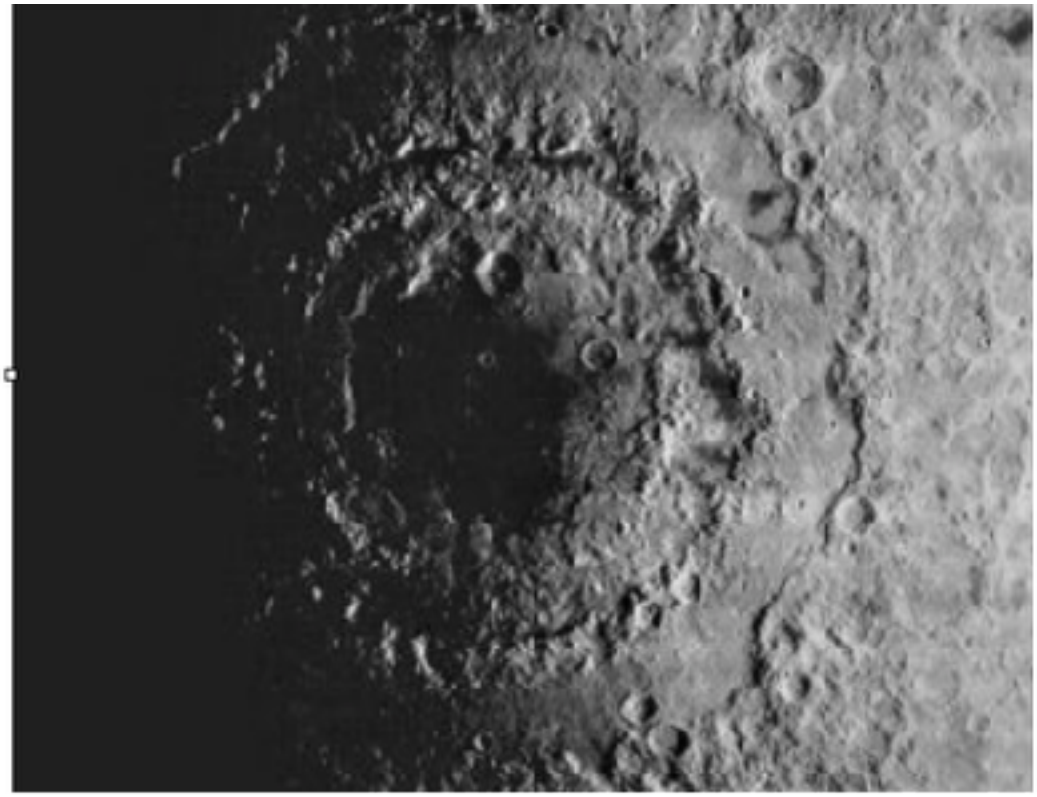
ARTICLE: The **#1 TASK:** we need to map Mars surface altitudes and where they change sharply, etc. **GOAL: A GEOGRAPHY OF MARS that indicates √ best road and railroad networks & maps, Showing √ "barriers" between easily negotiated, and difficult to negotiate terrain: √ steep changes of altitude, and other √ barriers to roads and rail.**

Global highways **on the MOON** other than the northern shore of Mare Frigoris and extensions East and West to Farside - Nearside "mareplex" routes (roads that connect the various Maria with one another), other routes. Mare areas closest to the nearside/farside north/south areas suitable for hotels etc. at 90° East limb and 90° West limb alternating views of Earth just above the horizon and just below it, with "The Milky Way" dominating the heavens instead of Earth, all along the East and West "terminators" from N pole to S pole.

Perhaps future Moon Settlers will no longer use the terms "nearside" and "farside" and *instead* speak of "Earth side" and "Milky Way side."

Skiing down the southern north-facing slopes never in the sunlight above above 30° in the highlands north of Mare Frigoris

Other popular "edge sites" - Mare Crisium (the "bullseye" basin on the far west side of the Moon, just east of the edge of the Moon as seen from Earth



> **Mare Crisum, the most beautiful <u>nearside/farside edge</u> "bullseye" impact on the Moon, probably the favorite place to go to see "the farside heavens."**

<u>Touring inside lava tube skylights, creating paths through the rubble file, exploring tubes in both directions.</u>

<u>Setting up places within stable sections of lava tubes for Earth/Moon archives</u>

<u>Search for "skylights" into lava tubes)</u>

MARS-focused OUTBOUND TOPICS

√ From Ships <u>to</u> Mars *<u>into</u>* Settlement Neighborhoods <u>on</u> Mars:

Instead of sending a ship back to Earth to bring another load of settlers about 3 years later, we could (and should) design all parts of the ship so that on arrival at the selected site on Mars, these parts can be rearranged to become **a settlement neighborhood.** The settlers "cabins" on the trip out will become their "homes on Mars" including furnishings etc. The Living Walls in the corridors of the ship, will become Living Walls on their home street "corridor," etc.

The next ship bringing settlers to this site would likewise form their neighborhood. ***<u>This would be a vastly more efficient way of bring settlers & settlements to Mars.</u>***

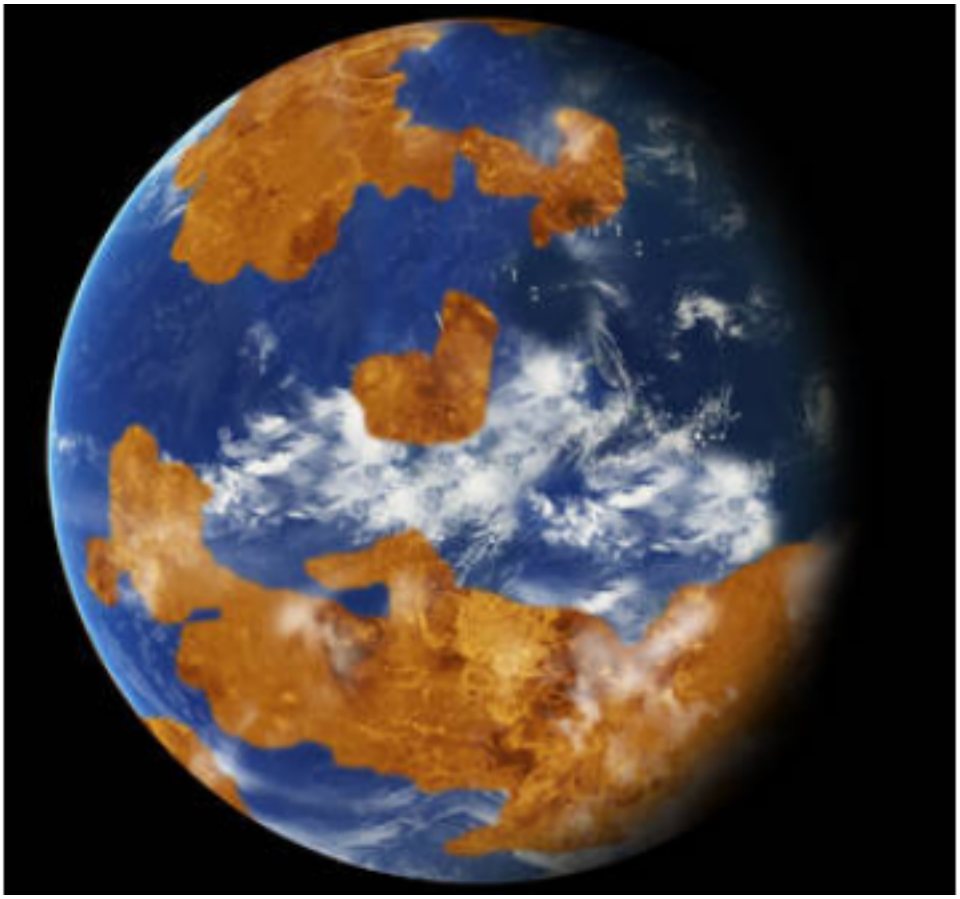
√ **Places on top of the Earth Visitor's List & ditto on Settler's list: There may be visitors but they would have to pay for their "excursions on Mars" as well as for "round trip" - including for their stay on Mars, "unless" they worked most of their time on Mars to help the Settlers "settle in,"** ***in which case after working off their round trip ticket, they would get a free ride home back home to Earth, with photos and films to show their relatives, neighbors, and friends.***

√ **Exploring inside lava tube skylights, creating paths through the rubble file, exploring tubes in both directions: things visitors could do to "pay" the cost of their round ticket, in part or in full. Setting up lava tubes for** ***Earth/Mars archives*****.**

√ **Dirigible-mapping** of Valles Marineris altitudes, √ **dirigible landing spots** √ **possible hiking paths,** √ **road paths,** √ **where to put hostels and hotels,** roads, paths, and rail, and √ ***park entrance location "gates" (visitors checked to see if they are properly equiped, and guided and have equipment that shows their position, should it be necessary to contact, or assist, or rescue them, etc.***

PERHAPS those spending 5 Earth years on Mars, might get a free ride back to Earth, if and when there is room on a returning "visitors' ship" (that is, of course, **not** ***on those ships that are disassembled to become "settler neighborhoods" on Mars.)***

————Venus, the most challenging "World"————



Above: NASA Climate Modeling suggests Venus may have been habitable
Some 2 billion years ago? Maybe! And Maybe again in a future opened by Man!
Currently, the "ocean basin" is still there, but minus the water.

Above: Venus is just a little less large than Earth, and it might have been (and could someday again be) a habitable world of √ a global ocean & √ 2 continents.

https://www.nasa.gov/feature/goddard/2016/nasa-climate-modeling-suggests-venus-may-have-been-habitable

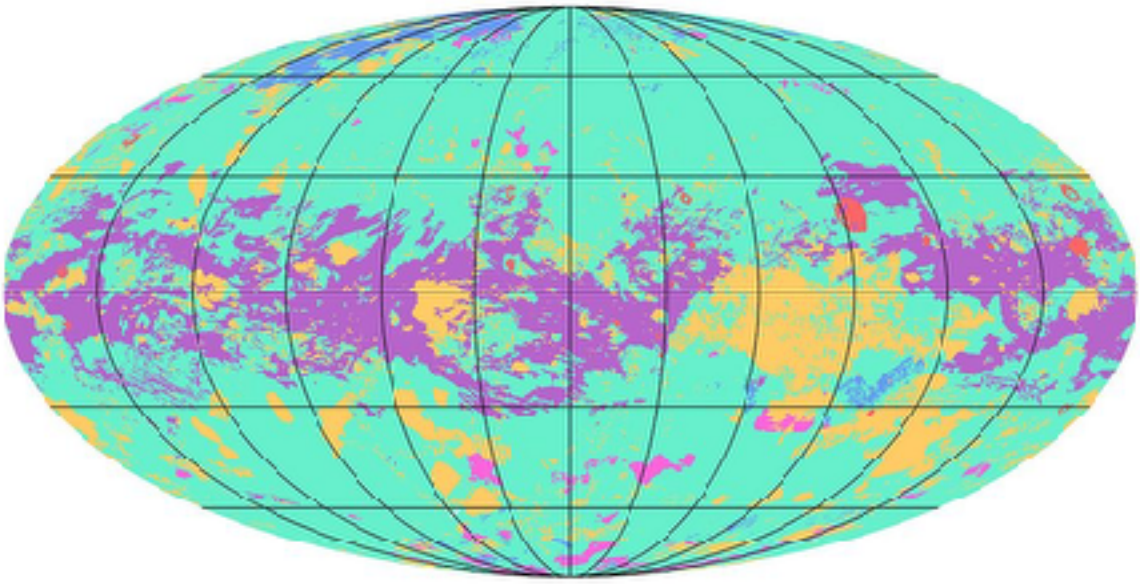
Some years ago, I (Peter Kokh) published a plan [link below] to make Venus habitable again, yes, filling that global dry ocean basin with water again. After all, 89% of the water is already there, in the oxygen of Venus' thick CO2 atmosphere, and the 11% hydrogen needed to make water is buffeting Venus constantly, in the Solar Wind.

We would have to find a way to capture that wind and mate it with the excess oxygen in its atmosphere. Settlement would start on the two places highest in elevation, one on each of Venus' two continents.| Our plan (several pages long) is still online:

http://strabo.moonsociety.org/mmm/whitepapers/venus_rehabpaper.htm

If we but clean up our radar screens of emotional noise, Voilà! ***Venus reappears!***
A planet that can support manned science outposts, with settlers there for life, and for visitors on an exotic tourist experience.
Sorry, tickets are not yet available. LOL!#
But someday, perhaps within the next hundred years……? PK

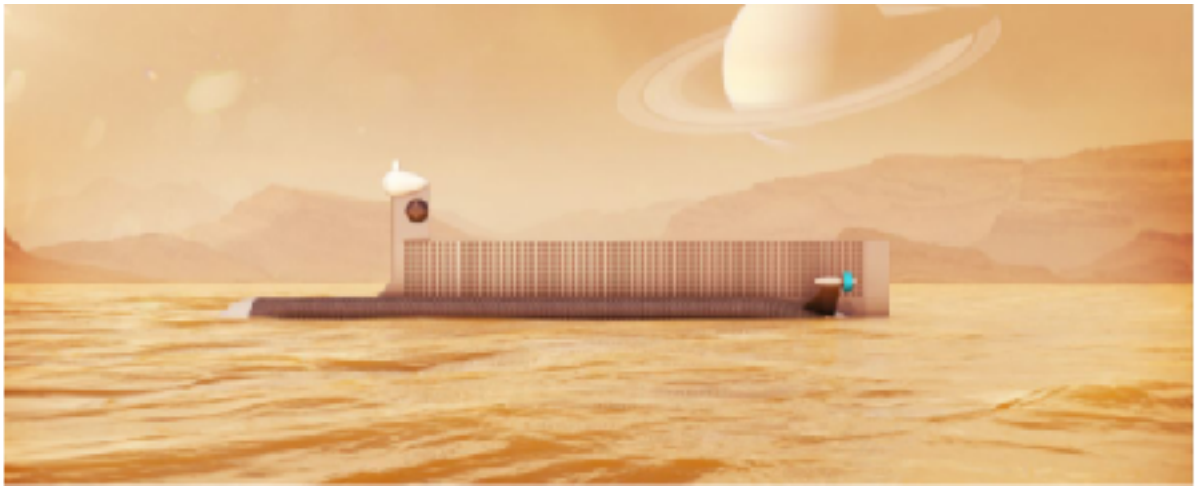
New Map of Saturn's Moon Titan Reveals a Liquid-Filled World
https://www.space.com/saturn-moon-titan-first-global-map.html



Above: **The first global geologic map of Saturn's largest moon, Titan.**

A new geologic map of Saturn's large moon Titan reveals just how much liquid this world holds. The map is shows the global geology of Titan, allowing us to get a better understanding about how different regions of this moon interact with each other.

Titan is considered a good spot to learn more about how the Earth looked during the early days of our own planet, because this Mercury-sized moon has a liquid cycle (like Earth) and also holds complex organic molecules: the building blocks of life..



Above: NASA may build unmanned submarines to explore Titan's "Great Lakes" "It won't be easy" (There are probably several other designs)

Amazing Photos of Titan, Saturn's Largest Moon

https://www.space.com/12638-amazing-photos-titan-saturn-moon.html

It is most unlikely that humans will ever be on Titan in a space suit, but maybe they could land on the surface in heavily insulated modules. Right now, that idea is pure science fiction. There are many engineers determined to *find a way!*

Those determined to put humans on Titan may find a way to keep them in a very heavily insulated vehicle able to maintain "room temperature" inside. Right now that's just science fiction. But so was the idea of humans landing on the Moon a few decades ago.

Venus is at the other end of the thermal range, and someday we may be able to alter Venus temperature so that humans can land and settle there also.

http://strabo.moonsociety.org/mmm/whitepapers/venus_rehabpaper.htm

"Venus and Titan are the "bookends" of human settlement." P. Kokh

(Not to forget Mercury and Europa, nor Pluto-Charon!)

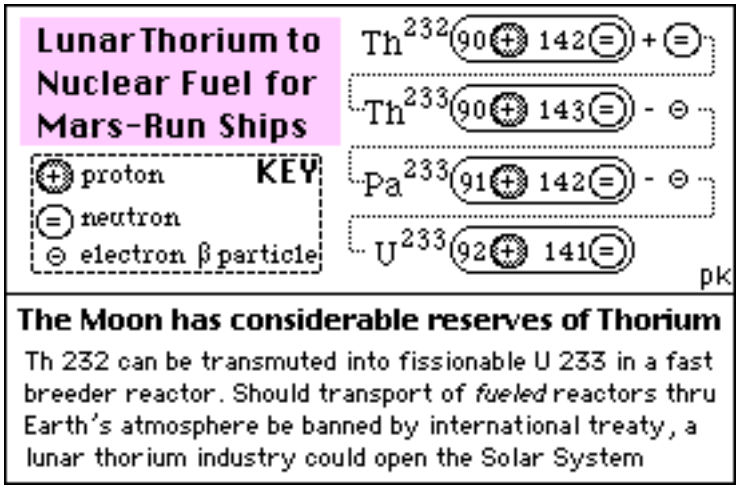
========== No, Not yet! But sooner than you may think!! ==========

Meanwhile, the Worlds Largest airplane is all set to fly.

So far, Humans have not ventured further than the Moon, only a few days distant, with non-nuclear fuels.

The importance of **nuclear power** is clear if we want swift travel to all locations millions of miles inward or outward from the Earth-Moon system. It is the only way to reduce travel times significantly. And **the Moon's enormous supply of Thorium** (which can be transmuted into **Uranium 233** nuclear fuel) is the key. The alternative, shipping outward from Earth with nuclear fueled rockets, should there be a failure shortly after lift-off, could invite disaster.

Transmuting Thorium->-Uranium 233 plan



Ships made on Earth, that have nuclear engines, will continue to be boosted from Earth into space with non-nuclear fuels, ***then refueled with nuclear fuels produced on the Moon, to take them further out ward to Mars and beyond, but also to take them inward to Venus and/or Mercury.***

In the meantime, we can get to Mars with conventional rockets, over several months, in the better part of a year. This time can be put to good use, settlers taking several courses in Mars geology and other topics, so that when they do arrive at Mars, they will be much better able to make themselves at home there.

And with these nuclear engines able to burn this nuclear fuel ***produced on the Moon,*** **humans can go far beyond Mars, through the asteroid belt, to the moons of Jupiter, Saturn, Uranus, Neptune, on to the Pluto-Charon binary planet, and beyond.** #

Without the Moon's enormous supply of Thorium, human missions to the outer planets and back would take many years, enormous food and non-nuclear fuel tanks, etc., if they were ever launched at all.#

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An Algorithm May Be the 1st Thing to See <u>Europa</u> Clipper's Coolest Discoveries from Jupiter's Moon

<u>https://www.space.com/**europa-clipper-science-algorithm**.html</u>

Those of you who have gotten Moon Miners' Manifesto over the years will be aware of my "top of the list" fascination with Europa. ***<u>Europa type moons</u> are likely to be several orders of magnitude <u>greater in number</u> than Earth-like*** (continents in a global water ocean) **worlds**. They could be found around gas giant planets like Jupiter, Saturn, Uranus, and Neptune, ***as well as around "Brown Dwarf" stars*** (not massive enough to "light up" as stars.

Are there limits to Intelligent Creatures?

The farther from home a probe ventures, the longer its dispatches take to reach eager humans on Earth and the shorter such reports must be. That's why computer scientists and planetary scientists are teaming up to develop an algorithm that could potentially identify the most intriguing data an icy moon explorer mission collects, sending those tidbits to receivers first.

If we find life forms (far different than anything on Earth or in Earth's oceans) in Europa's sub crust ocean, then we can reason that ***"Europid" type life forms are far more numerous than the more advanced humanoid civilizations.***

Bingo! We've got our fingers crossed! If there are "Europid" creatures, the Universe will be far more magnificent than we have thought to date, even if Europid life forms do not reach even the very lowest "intelligent" stage. But when Earth life was still at an early worm like stage, who would have thought that they would one day have evolved enough to produce you and me?

Our lifetimes are all too short! BUT!!! Our civilizations keep advancing.

Only a relatively few intelligent creatures here and there throughout the universe will get as far as we have. But if we made it, there most certainly would be others who have done likewise, including those who have advanced well beyond our present stage of civilization.

In general, intelligent civilizations will be scattered far and wide in the universe and "contacts" might be few as contact could destroy the civilizations of those at a less advanced state.

Star Trek's "Prime Directive"

There is clear common sense in the fictional Star Trek "Prime Directive."
https://en.wikipedia.org/wiki/Prime_Directive

The "**Prime Directive"** (also known as "**Starfleet General Order 1**"and the "**Non-Interference Directive**") is a guiding principle of Starfleet, *prohibiting its members from interfering with the internal and natural development of less advanced alien civilizations*.[1] The Prime Directive ***applies particularly to civilizations which are below a certain threshold of technological, scientific and cultural development***; preventing starship crews from using their superior technology to impose their own values or ideals on these civilizations.

To date, we have not found clues of space-faring civilizations at any levels. And perhaps we never will, but that will not indicate that we are alone, but rather only indicate that other advanced civilizations, wherever in our galaxy or beyond, may also follow their own order of "***no search, no contact***."

But are there things an advanced civilization could do that will, if noticed, indicate their presence? Maybe. Maybe not.

Our Universe is old enough that there may be many civilization out there, here and there, some more advanced than ours, some less advanced, many that are not yet advanced enough to begin to wonder if they were not alone.

What nature does once, it can do again, with no limits. And if they are advanced enough to realize that they might not be alone, but also that "no signs" of other civilizations does not mean that there aren't any (other civilizations, anywhere).

Ours is the only spacefaring civilization we know of. That does not mean we are alone, only that all advanced civilizations will also have come to the point that contact between civilizations may not be a good thing, for those less advanced. In our own past, European contact with less advanced civilizations elsewhere, all but destroyed most of those civilizations, if not also decimated their populations. #

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Pluto: Not only is Pluto<>Charon a "binary planet" It has its own system of moons that orbit Pluto-Charon

Snooty astronomers decided Pluto couldn't be classified as a planet because it has not cleared its orbit - but what you see above is evidence to the contrary.

There is a difference between "<u>is</u> clearing" and "<u>has</u> cleared."

Who are they to decide a time limit to the "clearing process."

Indeed Pluto-Charon has made less loops around the Sun because it is farther out, <u>and despite that, has added a system of moons of its own.</u>

That "professional" astronomers keep speaking of "Pluto" instead of "Pluto-Charon" shows that **they don't recognize a "binary planet" when they see one.** The difference is that ***the center of gravity*** of a "moon" and a "planet" ***lies within the planet***, <u>whereas in Pluto-Charon, it lies **between** them</u>. [Note: the center of gravity between Earth and the Moon lies within Earth's mantel.]##

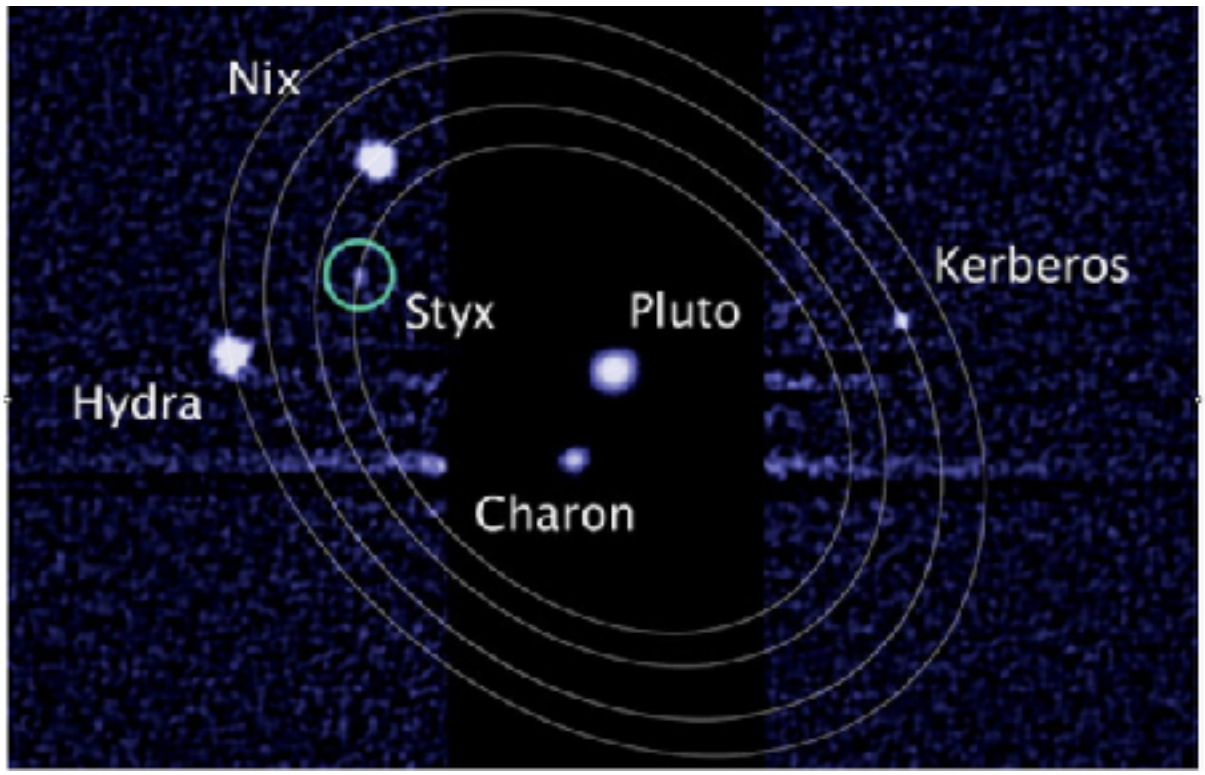
What would be a "Binary Planet"?

I believe that we have such a situation in our Solar System:

"<u>Wherever the center of gravity</u> of 2 bodies lies <u>*BETWEEN*</u> them, <u>NOT somewhere beneath the surface of the larger body</u>, as is the case with <u>all the "moons"</u> (<u>including ours</u>) of all other planets, —*except with Pluto and Charon*

We are confronted by two bodies, one admittedly larger, but <u>*the second body massive enough so that their mutual center of gravity lies BETWEEN them, in space. Further, not only does Charon keep the same face towards Pluto, but Pluto keeps the same face towards Charon.*</u> By these guidelines, Charon is "not a moon" or "satellite" of Pluto, but "the smaller of a pair" which together is a "<u>Binary Planet</u>."

No other planet in our Solar System has a moon so relatively large in mass to pair with the larger body this way, **and collectively to gather a "system" of shared moons, (Nix, Styx, Hydra, Kerberos) as in the sketch below.**



That collectively, **the "Professionals" of the Astronomical Association** ***have not noticed these differences, says nothing positive about their study of Pluto-Charon, and sheds doubt about their having earned a "professional" status, instead of being "yes men" followers of "leaders" who have clearly not earned their leadership status.***

And you can quote me on that. *Peter Kokh* **kokhmmm@aol.com**

Tourists may flock to this unique Pluto-Charon system once we have spaceships fast enough to get the there in months, *rather than in years,*

In time there may be a cable between Pluto and Charon allowing tourists to travel between them*. Why would we want that? When the side of one facing the other is experiencing nighttime, the facing side of the other is in daytime, etc. The distance between the two is fairly constant, enough so that such a "cableway" is quite feasible. Installing it may be tricky, perhaps extending a cable from each to the other until the ends meet, which could still be tricky.* ***Another option would be to pay out the cable from the point in between where the two gravity fields meet to the center of the face of each world facing the other.*** *"Where there is a will, there is a way!" as the old saying goes.*

More about Pluto-Charon's moons:
https://en.wikipedia.org/wiki/Moons_of_Pluto#Scale_model_of_the_Pluto_system ##

All aboard down to Titan's surface and into its "lakes" & "streams"

Saturn's moon Titan is by far more different from any world or environment familiar to us, putting it in the same "alien" level as Jupiter's alien moon Europa.

***Needed:** a robot that can touch, feel, hold, and examine any currently hypothetical life forms on Titan, and if any on Europa, and, if possible, without injuring them, and we will transmit and recreate those feelings for humans in orbit above. That's a tall order!*

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Sending/Receiving) Messages to or from alien Civilizations, light years away

For an interesting discussion, read the following article by Jeff Faust

https://www.thespacereview.com/article/3835/1

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Meanwhile, check out these size comparisons of Earth to _____!

https://www.buzzfeed.com/daves4/reexamine-your-entire-life
It doesn't stop here

Our entire Solar System is not even a pin prick
in comparison to our distance from the nearest star,

which in turn is a pin prick in comparison to the size of our galaxy,

which in turn is a pin prick in comparison to the size of our universe,

Which is only one universe among an infinite number of universes,

The "Omniverse".

(*this last insight contributed by Peter Kokh, way back in Sept. 1, 1961*)

Meanwhile, contribute *all that you can to the world we live in! It does count!*

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"FICTION" *"IN REVERSE"*

Write a story about intelligent life forms in Europa's ocean separated from what they imagine to be a universe above the global ice crust "firmament."

Anyone game? You would have to look at everything from an Europan sub-crustal ocean world point of view. Of course, what they imagine to be "above" will likely be as wildly "alien" as our views are likely to be of them "below."

Have fun! The wining entry will be a free ride to Europa! (one way, of course!). (NOTE: We are not responsible if you should pass, before you get a chance to rocket to Europa, or back to home.) There will be no rebates to your survivors. We would offer our condolences, of course, and a beautiful plaque in your honor. LOL! ##

My profound thanks and gratitude to James Burk and the entire Moon Society fß

I love what I am doing, and that is priceless. PK.

November 28, 2019, 2 weeks <u>before</u> my 82nd Birthday.

When I was 16, a cardiologist told me that my heart was miswired, ("right bundle branch block") and that there was no remedy, and that if I was extremely lucky, I just might make it to 60. Well my 60th birthday was to fall on December 11, 1997.

So all through the 1990's my favorite song was Prince's ***"I'm going to party like it's 1999!"*** And this coming December 11th, I'll be ***22 years past that, at 82!***

And still going strong! ##

<u>Enjoy this issue</u>, and ***make the best out of every new day!***

Peter Kokh